this becomes relatively quite large, in Fig. 2, when yield point of the brass is reached.

is now to be noted that when a bar of metal is sub-ed to a tensile stress a lowering of temperature takes e, and this lowering of temperature itself produces omentary change in emf, which often masks the nanent one; this effect can be noticed in the curves, it is for this reason that the author adopted the od of holding the specimen at a constant stress for time, and noting the emf, instead of using Ham-hen's method of continually increasing the stress g the course of the measurements.

CONCLUSIONS

is believed that an increase in emf of alpha brass to ions containing zinc and copper ions, caused by application of tensile stress, has been indicated and sured. This amounts to about 0.2 millivolt for 00 pounds per square inch (below the elastic limit) to about 1 millivolt at the yield point of the material, 00 pounds per square inch. This value is apparently h greater than would be calculated for elastic stresses n thermodynamic considerations; it agrees well with es calculated for stresses above the elastic limit. author does not wish at present to discuss this diverg- otherwise than to point out the emf measured may hat at some point of the surface, *e. g.*, at the bottom small notch, where the fiber stress is much greater n the average; in that case these results could be ught into agreement with thermodynamic theory.

n explanation is given of the effect of corrosion on s under stress, in decreasing the ductility and ngth, and which is based upon this fact of the in-sed emf and therefore corrodibility of brass under es. At the bottom of small furrows in the roughened face the stress is greater than at ridges immediately acent; a galvanic couple is formed, and the bottom of furrow only is corroded, forming in time a crack, h becomes narrower and sharper as it penetrates, lly so reducing the cross section that fracture occurs. his conception of the cause of the embrittling effect orroding agents on brass under stress is borne out by examination of samples which have been subjected Jonson's test. In such samples, not one but several ures appear, narrowing down and becoming micro-pically fine as they penetrate farther and farther into interior of the specimen. It may be noted in this nection that these fissures appear to favor the beta stituent and to avoid the alpha in a brass, such as nganese bronze, containing both of these.

he question as to why brass should be so susceptible his effect, and not also iron and steel (apparently, least), can not at present be adequately answered, indeed until further investigation has considerably eased our knowledge concerning the values of the ss-emf effect in these materials, the relative significance his effect in comparison with other local emf's (due to oxide and slag inclusions, etc.), the effect of the covering of corrosion product formed, and other points.

Apparently the effect produced by corroding solution having a low conductivity will, other things being equal, be greater than that of one of high conductivity, since it allows greater prominence to those local stress emf's between portions of the material immediately adjacent. It is known, for example, that nitric acid does not produce cracking in initially overstressed brass in the manner in which ammonium hydroxide or mercurous nitrate or chloride does.

Active Beavers at the New York Zoo

FOR the past year there has been a marked difference of opinion between the men in the Forestry Department and our beavers. When we constructed the beaver enclosure and regulated the drainage of the pond, a pipe was placed near the top of the dam, where the animals so industriously work. The object of this pipe was to form a sort of spillway for the dam-work to be designed and executed by the beavers. To prevent the pond from overflowing its banks, it is quite necessary to keep the pipe open. That necessity is constantly combated by the beavers, which persistently stuff the pipe full of twigs, leaves and mud to prevent it from performing its function. As it takes several days for the beaver to completely block the pipe, it is cleaned out at intervals a few days apart.

The night after the drain has been cleared is a busy one for the beavers. In their first rush to combat the change, and stop a wicked waste of perfectly good water, they use every kind of *debris* available. Even corn husks are not scorned in the reconstruction work.—*Bulletin of the New York Zoological Society.*

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